HaloDAO

Litepaper: Token Model Overview

Building a Common Asian Stablecoin Market

Abstract

This paper describes an incentivisation system, embodied in a Decentralised Autonomous Organisation called HaloDAO, a stablecoin marketplace built to facilitate the minting of synthetics pegged to various Asian currencies, a stablecoin optimised automated market maker to exchange between Asian asset backed stablecoins and synthetics, and a lending market to generate yield for local currency farming. This regional protocol is primarily developed for the Southeast Asian region, home to 655 million people.

We aim to create a foundational layer for the Southeast Asian digital economy by;

1. collateralising USD pegged asset back stablecoins as collateral to mint synthetic local stablecoins, relying on the UMA Protocol for their priceless financial contracts and optimistic oracle services.
2. Building a stablecoin optimized AMM that efficiently facilitates swaps and minimizes slippage between differently priced stablecoins (whereas Curve is only optimised for similarly priced tokens)
3. Bootstrapping a lending market, such as Compound and Aave that enables a foundational money lego to generate local currency derived yield off of permissionless lending and borrowing

The HaloDAO team will drive liquidity to these regional stablecoins through a combination of drivers: tapping global liquidity via liquidity rewards, establishing gaming partnerships and creating more on and offramps integrations with existing wallets and exchanges around Asia. With a greater supply of local stablecoins, users will be able to access the permissionless Decentralised Finance (DeFi) economy, thereby lowering the barrier to individual financial participation in a region of the world with a high potential of growth and impact.

We are committed to and focused on this geography, as we believe that employing a localised approach with a deep cultural awareness will be key to mass adoption.

Concepts

HALO

HALO is the ERC20 governance token, limited to 100,000,000 supply to be

distributed over 5 years that enables holders to participate in governance and acts as a claim against local stablecoin earnings of the Protocol.

Asset Backed Stablecoin
An ERC20 stablecoin issued by a licensed financial institution in a relevant jurisdiction (such as one licensed by the Monetary Authority of Singapore in Singapore or the Bankgo Sentral ng Pilipinas in the Philippines) that functions as claim against fiat (physical notes issued by the relevant central bank) held as collateral on a 1 to 1 basis. An example would be 1 xSGD backed by 1 SGD in the bank account of the licensed issuer. This is similar to how USDC is issued and backed by US Dollars held in a traditional reserve account.

Synthetic Stablecoin

In contrast to an asset backed stablecoin, a synthetic stablecoin is issued from cryptocurrency collateral instead of fiat collateral issued by a central bank. This synthetic is built to "mirror" the price of the target currency, though synthetics are usually more volatile (but not to the degree of non stablecoin cryptocurrencies like Ether or Bitcoin) compared to asset backed stablecoins. A preexisting example of a synthetic stablecoin is DAI of MakerDAO, which accepts Ether and other volatile cryptocurrencies as collateral to mint DAI on a 1 to 1 basis with the US Dollar. There are other mechanisms in play, such as a stability mechanism and expectations of arbitrage among rationale market actors, but this surface level definition suffices for context.

Stablecoin Earnings Pool

The repository of Protocol earnings taken from;

1. lent out USD stablecoin collateral by liquidity providers to mint local currency pegged synthetics.
2. Exchange fees from traders on the AMM
3. Commissions from interest gained through lending and borrowing local currency pegged synthetics

This earnings pool will be used to fund long term DAO operations and also buyback and/or burn/redistribute HALO from the market.

HALO Rewards Pool

The repository of the HALO governance tokens reserved as a reward to liquidity providers (across the stablecoin optimised AMM, synthetic stablecoin minter and lending market) and users of the protocol.

On/Off Ramp

The licensed cryptocurrency exchange or financial service entity that allows users to exchange local stablecoins (whether asset backed or synthetic) for fiat or vice-versa.

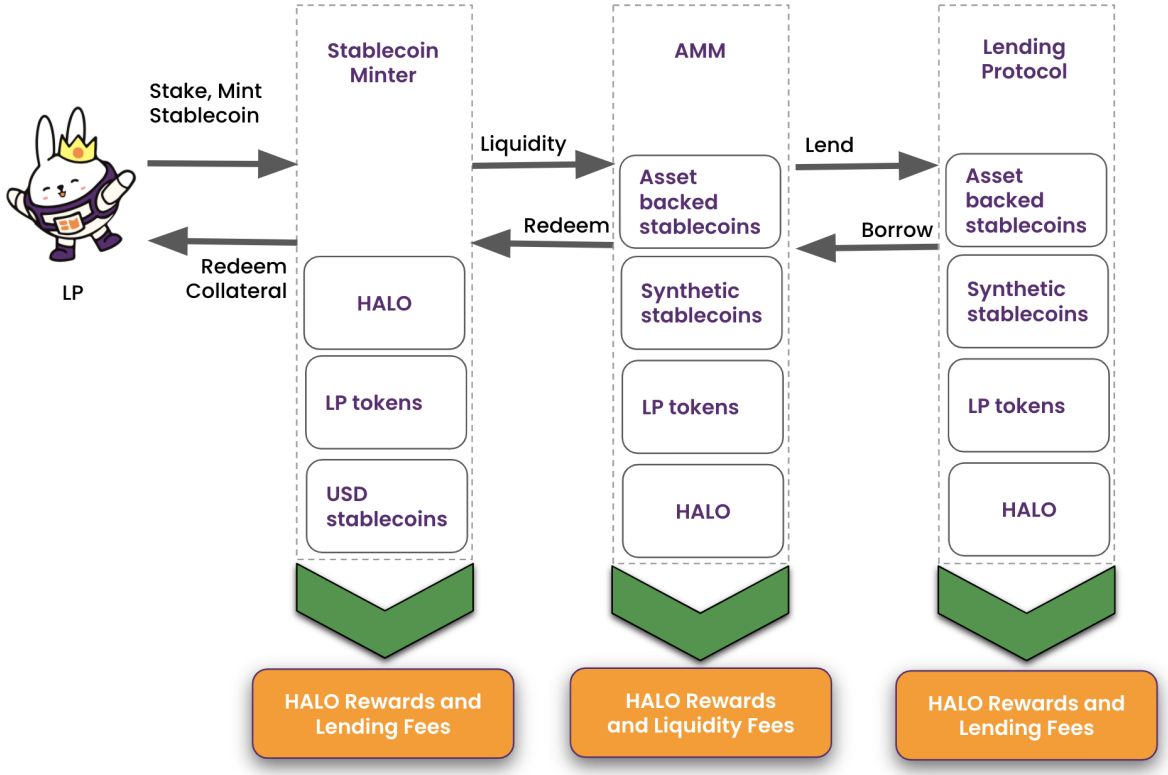
Liquidity Provider

The entity, individual or smart contract that either;

1. Deposits USD pegged stablecoins as collateral into the Halo Protocol to mint synthetic stablecoins. This Liquidity Provider (LP) earns HALO governance tokens proportionate to his/her liquidity.
2. Or provides liquidity into an AMM pool supporting trades between other cryptocurrencies and a HaloDAO synthetic stablecoin.

Token Model

Figure 1: HaloDAO Value Chain



FX Automated Market Maker (AMM)

HaloDAO will incentivise liquidity provision and trading between Asian asset backed stablecoins, synthetic stablecoins and important pairings between those stablecoins and popular currencies, such as ETH, WBTC, USDC, USDT, DAI, etc.

Lending Protocol

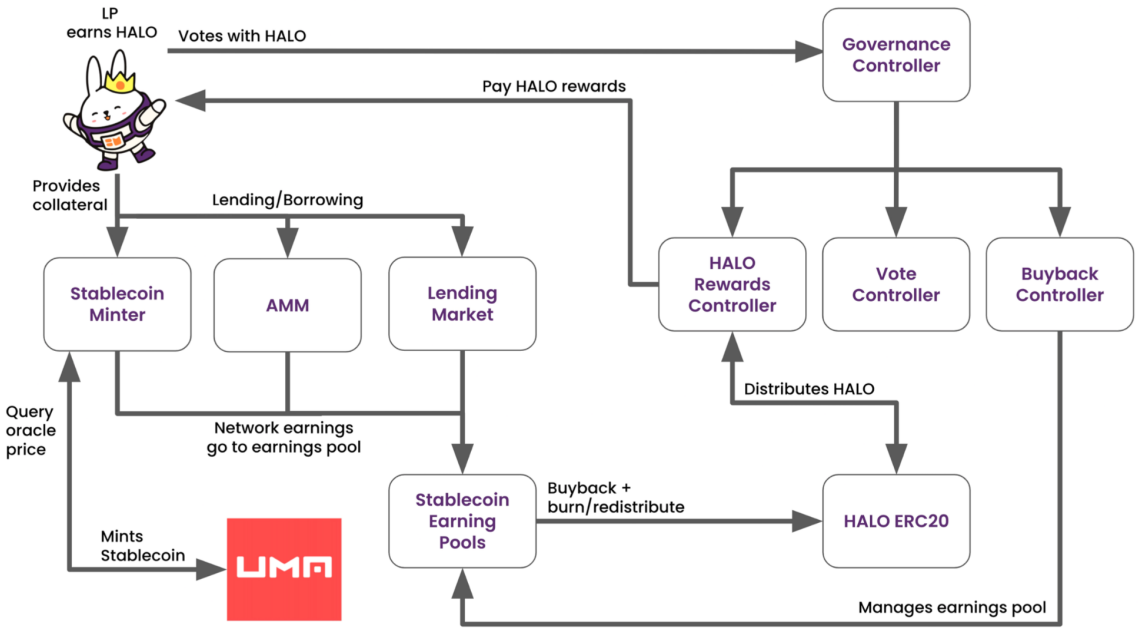
It is not enough to simply mint a region-specific stablecoin, and provide liquidity to an AMM. The goal of HaloDAO is to build up a regional lending and borrowing market for Asia specific stablecoins so that end users will be able to get a regional currency-denominated interest rate on their holdings - essentially "local currency farming".

Stablecoin Minter

HaloDAO relies on a core integration with UMA's DVM that provides a "priceless oracle" mechanism to mint synthetic stablecoins at a price feed relative to collateral tokens and the target regional currency.

Technical Overview

Figure 2: HaloDAO High Level Components

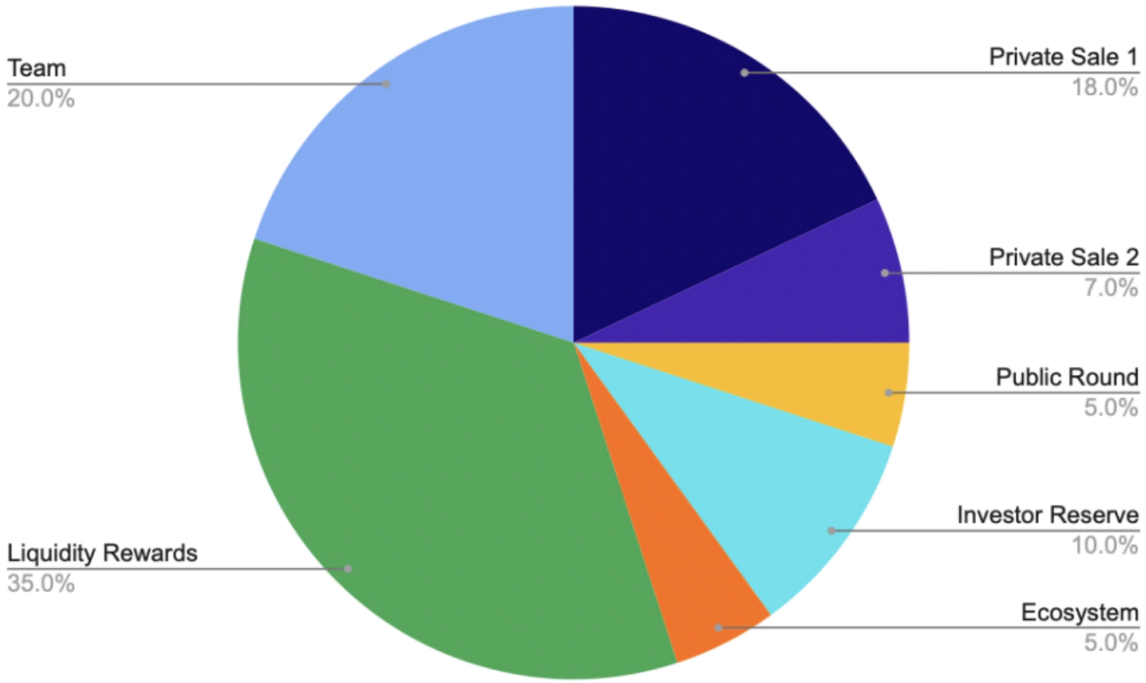


The core modules enable the:

1. Swapping of region specific asset backed stablecoins and synthetic versions where applicable
2. Minting and redemption of region specific stablecoins
3. Lending and borrowing of these region specific stablecoins
4. The earning of HALO rewards for actions along the profit drivers of the above
5. Governance of the HaloDAO Protocol by HALO token holders who decide on;
    a. New economic and geographic regions to expand to (new collateral types and synthetics to support across the AMM, Minter and Lending Market)
    b. Adjust the HALO burn rate (to lessen the total HALO supply over time, funded by the Stablecoin Earnings Pools)
    c. When to execute buybacks using funds from the Stablecoin Earnings Pools
    d. And many other proposal types

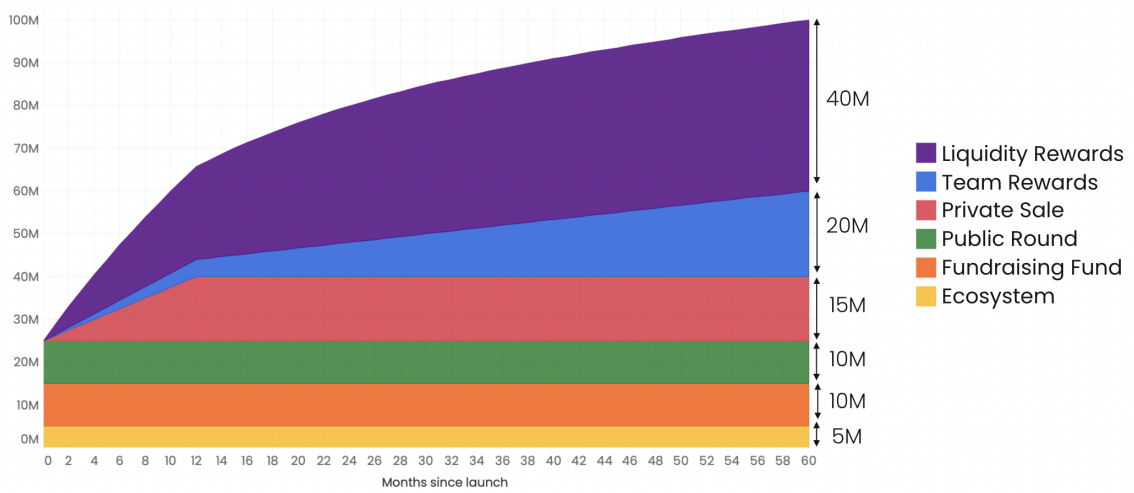
Tokenomics Overview

Figure 3: Token Distribution



The above diagram illustrates the breakdown of the 100 million supply capped HALO governance tokens. 25% of HaloDAO tokens has been sold in our Private Sale and 5% will be sold in the Public Round. 5% will be kept for ecosystem support, such as grants, hackathons and other activities. 10% is reserved for future fundraising to support the continued development and adoption of the Protocol. 35%, the largest allocation, will be rewarded to incentivise liquidity providers who will create and seed markets with region-specific stablecoin liquidity. 20% will be used to incentivise the team for long term participation in the project.

Figure 4: 5 Year Token Emission Schedule



Liquidity Rewards

A total of 35M HALO tokens will be rewarded to liquidity providers for a target duration of 5 years. The distribution schedule will follow a decaying growth function in order to reward early adopters and then approach a zero limit towards the 60th month from launch as the HALO market cap grows. The exact proportion of HALO rewards between AMM LPs, Lending Market LPs and collateral LPs (to mint synthetics) will be determined closer to the public token launch. This regular disbursement of liquidity rewards tokens may be revisited by the community every few months as the Protocol grows and may be increased or decreased to match the incentivisation alignment needs of present and future liquidity providers. For the moment, however, the calculation is pegged to a 5 year emission schedule, starting at roughly 6.5M tokens as rewards for the first month gradually decreasing to a 0 limit at the 60th month.

Monthly HALO Liquidity Rewards will follow a decay curve function that will be fixed for the specific month, but paid out linearly per block within that month. At current network parameters, HALO is rewarded on every block linearly within a month's epoch;

$$HALO_{\text{reward\_per\_block}} = \frac{Collateral_{staked}}{TotalCollateral_{staked}} * RewardsRatio * HALO_{\text{block\_reward}}$$

Where;

- $Collateral_{staked}$ is the liquidity provider's total collateral provided

- $TotalCollateral_{staked}$ is the total collateral provided by all liquidity providers
- RewardsRatio is the total rewards allocated for a particular dApp (AMM/Lending Market/Synthetic Minter)
- $HALO_{\text{block\_reward}}$ is the linear reward per block for that specific epoch (each epoch equalling one month and each subsequent month following the decaying rewards function)

At current network parameters, it will take ~5 years for the HALO Rewards Pool to empty. Before that happens, however, the Foundation (or any other HALO token holder) may propose a buyback vote which will replenish the HALO Rewards Pool for Liquidity Providers. Of course, at any time HALO holders may propose a vote to enact any miscellaneous action, such as burning HALO upon buyback or to alter the minute network parameters to react to market changes.

Team Rewards

20 million HALO tokens are allocated to the team to incentivise good work to advance Protocol objectives. Roughly 325,000 HALO per month will be paid to the core team for the same 60 months schedule.

Ecosystem

5 million HALO tokens will be reserved as ecosystem support for wallet builders, payment processors or any other financial institutions that want to make use of HaloDAO's stablecoin liquidity. HaloDAO will provide any SDKs or tooling that might make it easier for these entities to onboard into the permissionless and borderless commerce inherent to Decentralised Finance (DeFi). Additionally, the Ecosystem fund could also provide grants and any other assistance to potential adopters of regional stablecoins.

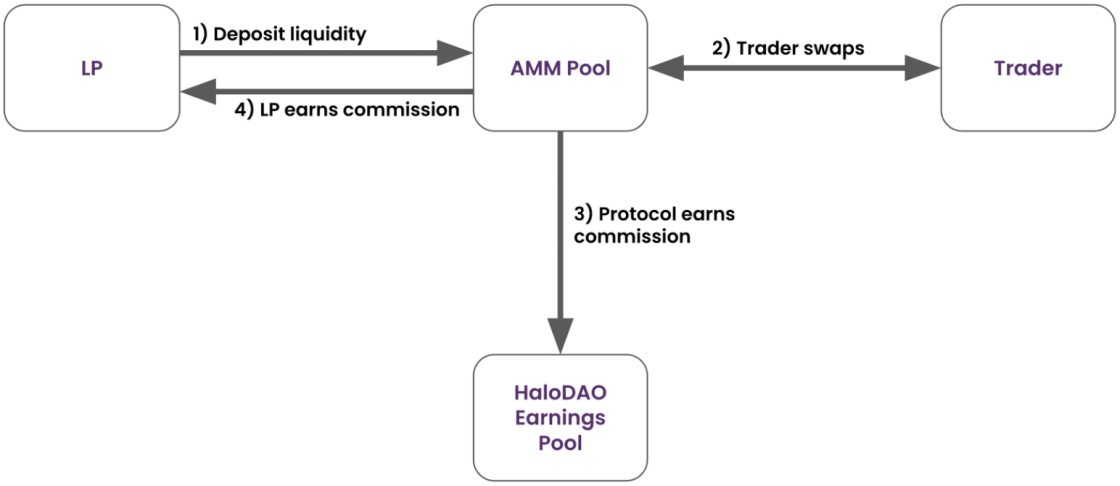
Investment

Last but not least, institutional money is necessary to get the initial team and product off the ground. For this reason, the team has allocated a total of 35M tokens to sell for the current private and public rounds (including a future funds reserve) to fund initial development, liquidity, launch and future development.

Profit Drivers

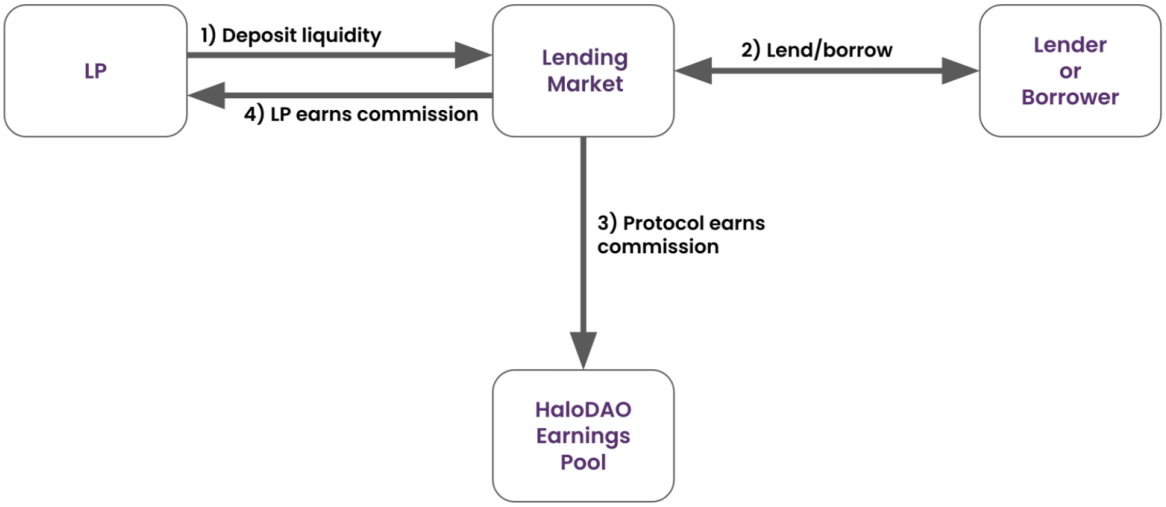
The main profit drivers of the HALO network are;

1. Exchange fees from the AMM



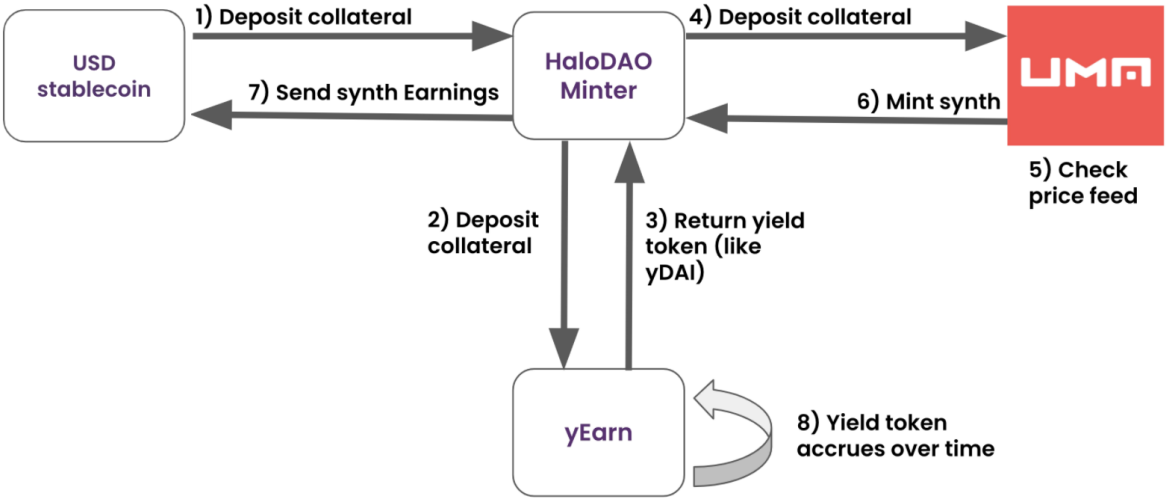
The protocol will start by keeping the same 0.3 % liquidity provider fee and 0.05% protocol fee that Uniswap v2 implements. This protocol fee will go into the Halo Earnings Pool. HALO token holders in active governance will receive a portion of this revenue. Additionally, these parameters are changeable by governance votes by HALO token holders.

2. Interest commissions from the Lending Market



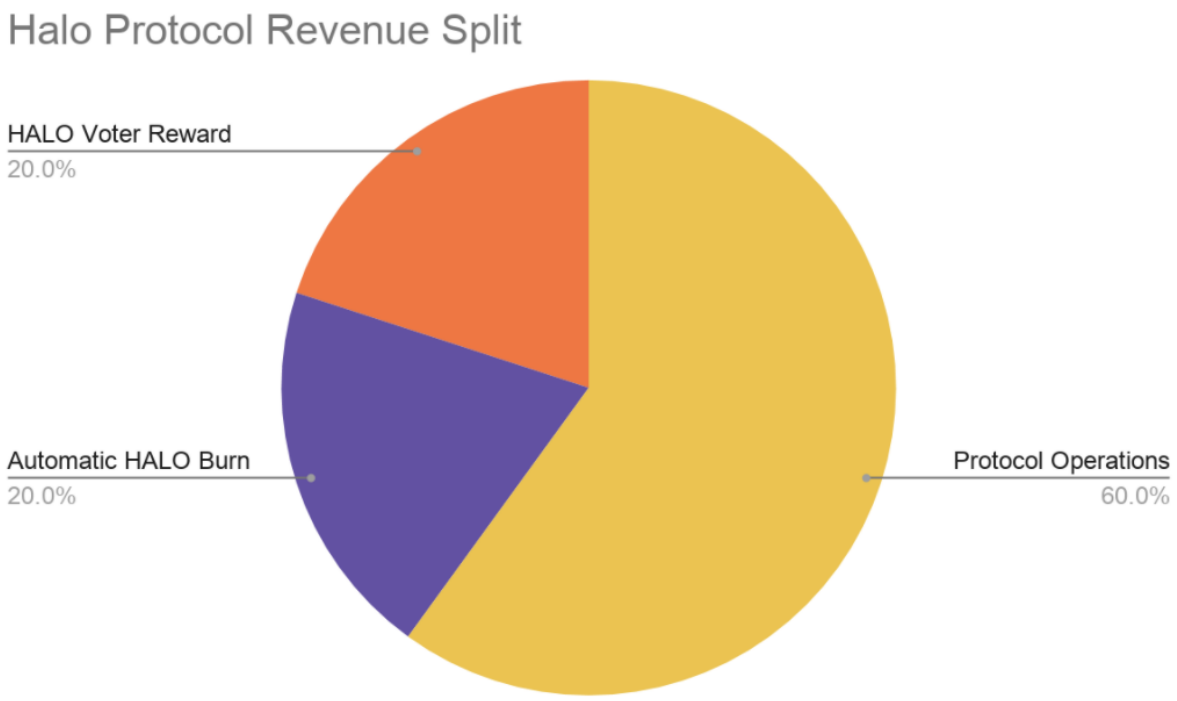
The protocol will take a commission (more detailed parameters to be announced closer to launch) from borrowers who pay fees to lenders. Additionally, any relevant parameters will be changeable by governance votes by HALO token holders.

3. Interest commissions from lending out collateral used to mint synthetic stablecoins



The collateral provided by liquidity providers in order to mint a synthetic stablecoin will be used to deposit into a lending protocol (starting with our own), which will generate revenue to be distributed to HALO token holders in active governance. One example of this is depositing USDT collateral to the lending market and receiving hUSDT (analogous to cUSDT for Compound or crUSDT for Cream). This hUSDT can now be used as collateral to mint synthetic stablecoins (such as one pegged to the Philippine Peso or Singaporean Dollar) in accordance with a price feed (such as UMA's DVM), as shown in Figure 5 below. Additionally, these parameters are changeable by governance votes by HALO token holders.

Figure 7: HALO Earnings Pool



As seen above, protocol revenues are split between an earnings pool to;

HALO Voters

At the time of writing, HALO Token Holders that are actively staked and voting in the Vote Controller Contract will automatically receive 20% of all stablecoin revenues every block. Take note that the voting reward is different from the HALO rewards given to Liquidity Providers. This voting reward is taken from the mechanic described above.

Automatic HALO Token Burn

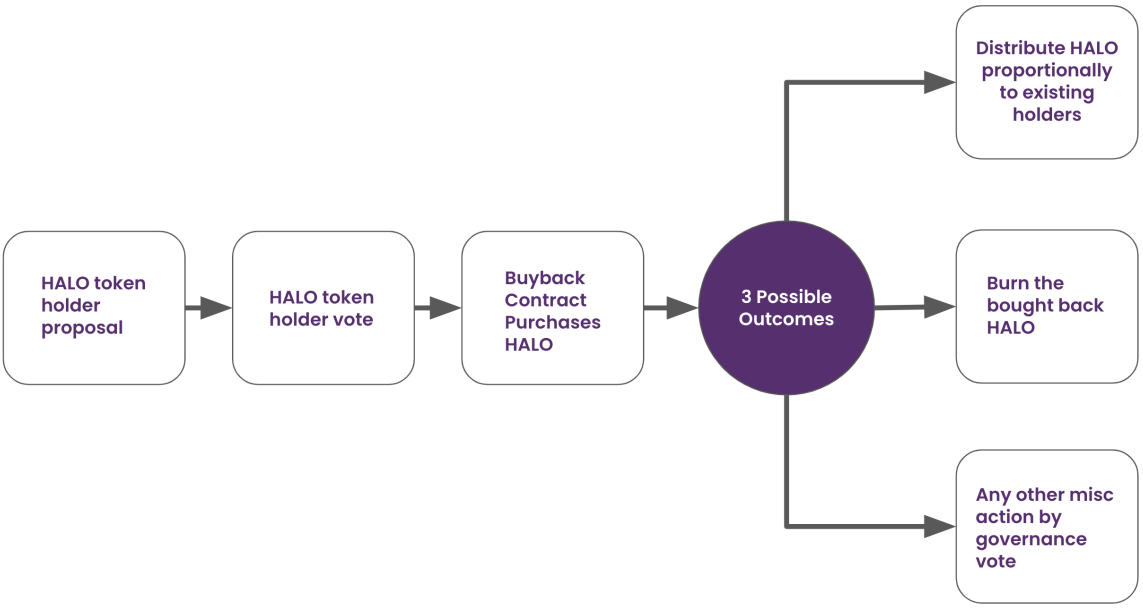
20% of all stablecoin revenue earned by the Protocol will automatically be used to buy HALO from our AMM and burn it, decreasing the total supply of HALO.

Protocol Operations

Allocation on the remaining 60% of Protocol revenue will be done via HALO Token Holder vote. Examples of allocations could be, but not limited to, buybacks and redistribution to the HALO Rewards Pool for Liquidity

Providers, additional HALO token burns, reinvestment into the Protocol, reinvestment into additional liquidity, grants to builders, etc.

Figure 8: HALO Buyback Mechanism



Once a HALO token holder proposes a buyback for voting in a specific epoch, all HALO token holders may begin to vote on that proposal for a period of 2 weeks. If a buyback proposal receives a majority vote, then the BuyBack Controller on chain will immediately use the available balance of a specific token in the Earnings Pool to buy HALO from our AMM (or even others) at market price. The proposal may detail an automated action after buyback, such as:

1. Redistribution to existing and active HALO voters

   The bought back HALO would be used to replenish the HALO Rewards Pool where only liquidity providers can earn it for supporting the Protocol. This also has the effect of lessening both the freely circulating and total staked HALO supply, thereby increasing returns for investors + liquidity providers, and thus increasing intrinsic demand for free market HALO. Of course, a governance vote may also decide to burn the bought back HALO tokens or even reinvest it in the Protocol in whatever form.

2. HALO token burn

   The bought-back HALO would then be burned, thus lessening the total HALO supply and benefiting all HALO holders.

3. Buying collateral off the market to increase utilisation rate for greater yield to lenders, bootstrap new trading pairs or mint more synthetics

4. Or a manual, miscellaneous action by the Foundation, such as reinvesting into Protocol development or anything else that may be proposed by governance. Governance may also vote for the Foundation to manually allocate the bought back HALO for any purpose the HALO token holders deem necessary.

Governance

Voting

The foundation will release a voting portal that will allow any HALO token holder to stake and vote on proposals initiated by other HALO token holders.

$$Stablecoin\_Reward_{block} = \frac{Halo_{user}}{TotalHalo_{staked}} * Total\_Income_{block}$$

A user's stablecoin reward is calculated by taking their proportion of staked and voting HALO and multiplying that by the total income earned by the Protocol during a specific block. Those who are actively staked and voting token holders will in turn be compensated per epoch based on their proportion of staked HALO tokens from the total staked and voting HALO supply; and not from the total HALO supply.